The Angora Fire in the Lake Tahoe Basin - Water Utility Emergency Response to a Forest/Urban Wildfire

Paul A. Sciuto, P.E.
Assistant General Manager/Engineer
South Tahoe Public Utility District

The Angora Fire - Utility Emergency Response

- Intro/Summary
- Issues/Challenges
- Work Immediately After the Fire
- Reimbursement
- Lessons Learned
- Conclusions

South Tahoe Public Utility District

- 112 Employees
- 253 Miles of Waterline
- 22 Water Tanks
- 15 Wells
- 16 Booster Stations
- 23 Pressure Reducing Valves
- 1500 Fire Hydrants
- 15 Pressure Zones
- About 14,000 Connections

Service Area

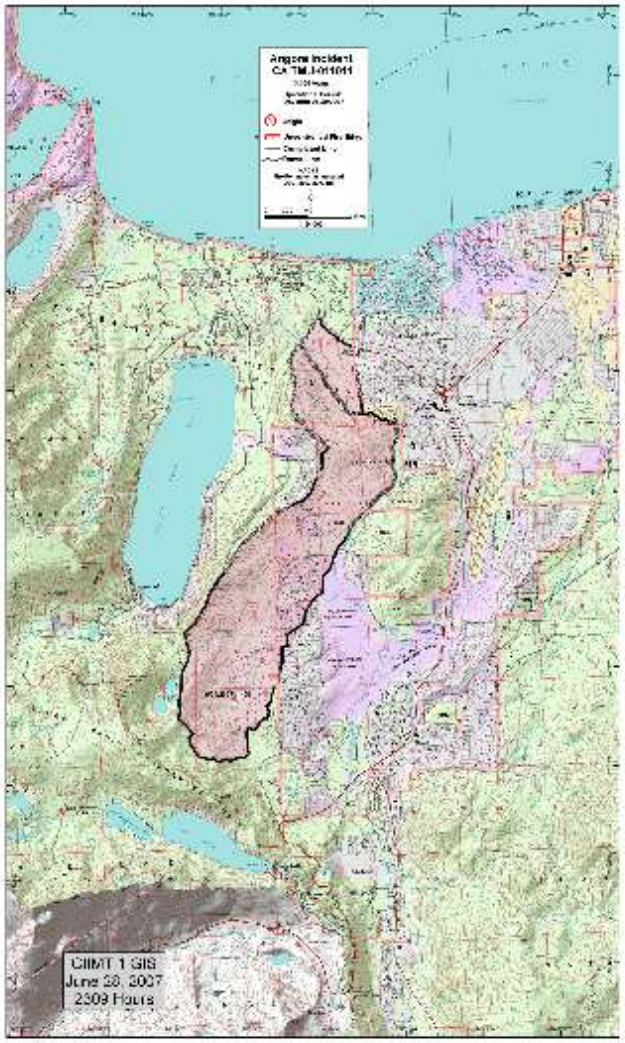
Angora Fire

- Started on June 24, 2007
- Burned 3,100 acres
- Destroyed 254 Homes
- Damaged 35 Other Structures
- Fire was fought with
  - 2,174 people
  - 164 Fire Engines
  - 21 Aircraft
  - 15 Water Tenders
- No lives lost

District Employees

- During the fire 47 employees worked on fire related activities (about 42% of staff)
- Approximately 825 regular hours and 355 overtime hours expended
- Post-fire related work to date is about 2100 regular hours and 520 overtime hours

Angora Fire and District Facilities



- Eight Water Tanks
- Three Booster Stations
- Numerous Intertie Valves and PRV's
- Permanent and Portable Generators
- Engine Driven Fire Pumps

Water Production

- Average daily production is about 10 MGD
- Highest maximum daily production ever on June 25, 2007 at 17.26 million gallons
- Total water production the week of the fire was 89.91 million gallons

Challenges/Response

- Access
- Communication
- Worker Safety
- Water Distribution
- Incident Command Post

Access and Communication

- Fire
- Downed Power Lines
- Radios and Cell Phones
- No Reliable Media Source
- Communication with Emergency Personnel

Worker Safety

- PPE
- Nomex Suits
- Air Quality
- Proximity to Fire
- Hours worked
- Food and Water

Water Distribution

- Access to facilities
- Emergency Power
- Instrumentation
- Flowing Water Services
- System Valves and interties
- Damaged Infrastructure
- Hoses and sprinklers

Water Distribution (Cont.)

- Tracking of Actions
  - Valves open or closed
  - Tank levels checked
  - Diesel at emergency Power
  - Interties with other water companies

Incident Command Post (ICP)

- Established in the Heavenly Ski Resort Parking Lot
- A “Small City” Housing and Feeding 2,000 People
- Supplying Water and Wastewater Services
- Integrating into ICP Planning and Strategy Meetings
- Communication with Fire Departments

Work Immediately After the Fire

- Cap Sewer Laterals
- Test, Repair, and Replace Hydrants
- Slope Stabilization
- Hazard Tree Removal
- Tank and Booster Station Condition Assessment
- Confirm Water Services were off

Sewer Laterals and Hydrants

- Approximately 26 hydrants replaced and 40 hydrants rebuilt
- 254 Sewer Laterals Capped
- About $585,000

Water Tanks and Sites

- 5 Tanks Evaluated
- Slope Stabilization at Two Sites
- Hazard Trees Dropped at Two Sites

Reimbursement

- Through OES and the District's Insurance we have Submitted for Reimbursement of about $1 million
- Track All Time
- Correlate Expenditures to Impact of Fire
- OES Funding an Additional Person to Work on Plan Review and Inspection for New Homes in the Fire Area

Future Projects

- Recoating of Water tanks
- Repairs on Damaged Structures
- New Fire Pump or Generator
- Evaluation and Changes of 10-year Capital Improvement Project List

Lessons Learned

- Immediately Contact ICP – Don’t wait for an invitation
- Integrate into the Strategic Planning Meetings
- Provide Appropriate PPE even if ICP says it is not required
- Consider and Plan for loss of power, loss of SCADA, limited access, redundancy
- Start thinking about post-emergency implications even before the situation is under control
- Revisit Emergency Response Procedures
- Get Trained in NIMS/SEMS

Lessons Learned (cont.)

- Notify OES and Immediately Apply for Potential Reimbursement
- Track all costs for potential reimbursement
- Set up the EOC at the District
- Track and Log all Actions
- All Employees Should have ID’s with Pictures
- Have Beacons for Every Truck
- Coordinate our Emergency Response Plan with our Business Continuity Plan

Conclusions

- No District personnel were injured.
- The District had water flowing during the entire fire.
- The District's Response was Commended by Local Fire Chiefs
- We will Modify Some Procedures to Better Prepare for the Next Emergency

Contact Information

Paul A. Sciuto, P.E.

Assistant General Manager/Engineer

- (530) 543-6202
- psciuto@stpud.dst.ca.us